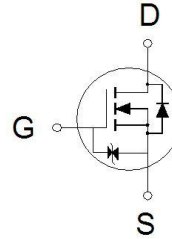




PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
30V	450mΩ	0.87A

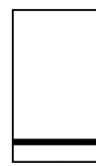


Features

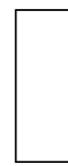
- Pb-Free, Halogen Free and RoHS compliant.
- Low $R_{DS(on)}$ to Minimize Conduction Losses.
- Ohmic Region Good $R_{DS(on)}$ Ratio.
- Optimized Gate Charge to Minimize Switching Losses.
- ESD Protection - HBM Class : 2.

Applications

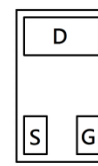
- Protection Circuits Applications.
- Logic/Load Switch Circuits Applications.
- Space Limit & Smart Devices Applications.



Top View



Side View



Bottom View

G: GATE
D: DRAIN
S: SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ °C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	± 12	V
Continuous Drain Current ²	$T_A = 25\text{ °C}$	I_D	0.87	A
	$T_A = 70\text{ °C}$		0.7	
Pulsed Drain Current ¹		I_{DM}	1.8	A
Power Dissipation ³	$T_A = 25\text{ °C}$	P_D	0.69	W
	$T_A = 70\text{ °C}$		0.44	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE		SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient	$t \leq 10s$	$R_{\theta JA}$		180	°C / W
	Steady-State			225	

¹Limited by maximum junction temperature.

²Limited by package.

³The Power dissipation is based on $R_{\theta JA} t \leq 10s$ value.

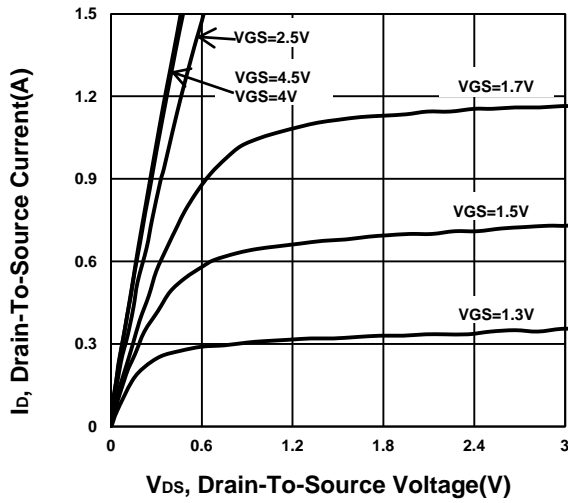
ELECTRICAL CHARACTERISTICS (T_J = 25 °C, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	30			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.4	0.7	1	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±10V			±30	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30V, V _{GS} = 0V			1	μA
		V _{DS} = 30V, V _{GS} = 0V, T _J = 55 °C			10	
Drain-Source On-State Resistance ⁴	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 0.5A		283	450	mΩ
		V _{GS} = 4V, I _D = 0.5A		293	470	
		V _{GS} = 2.5V, I _D = 0.25A		360	700	
Forward Transconductance ⁴	g _{fs}	V _{DS} = 5V, I _D = 0.5A		2.2		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 15V, f = 1MHz		46		pF
Output Capacitance	C _{oss}			19		
Reverse Transfer Capacitance	C _{rss}			9.9		
Total Gate Charge ⁵	Q _g	V _{DS} = 15V, V _{GS} = 4.5V, I _D = 1A		1		nC
Gate-Source Charge ⁵	Q _{gs}			0.14		
Gate-Drain Charge ⁵	Q _{gd}			0.35		
Turn-On Delay Time ⁵	t _{d(on)}	V _{DD} = 15V, I _D ≅ 1A , V _{GS} = 4.5V, R _{GEN} = 6Ω		17		nS
Rise Time ⁵	t _r			31		
Turn-Off Delay Time ⁵	t _{d(off)}			102		
Fall Time ⁵	t _f			58		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C)						
Continuous Current	I _S				0.57	A
Forward Voltage ⁴	V _{SD}	I _F = 0.5A, V _{GS} = 0V			1.2	V
Reverse Recovery Time	t _{rr}	I _F = 1A, dI/dt = 100 A/μs		65		nS
Reverse Recovery Charge	Q _{rr}			38		nC

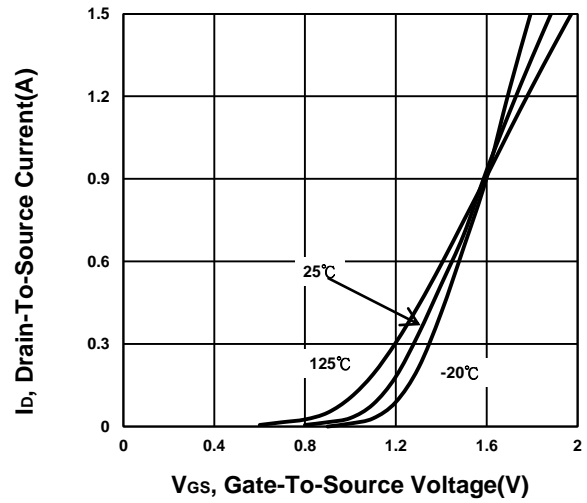
⁴Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

⁵Independent of operating temperature.

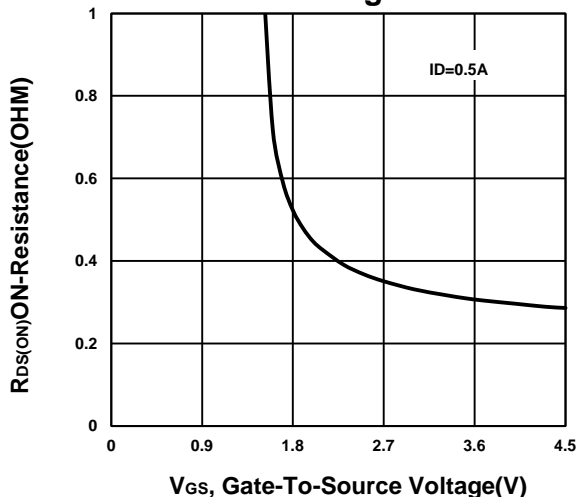
Output Characteristics



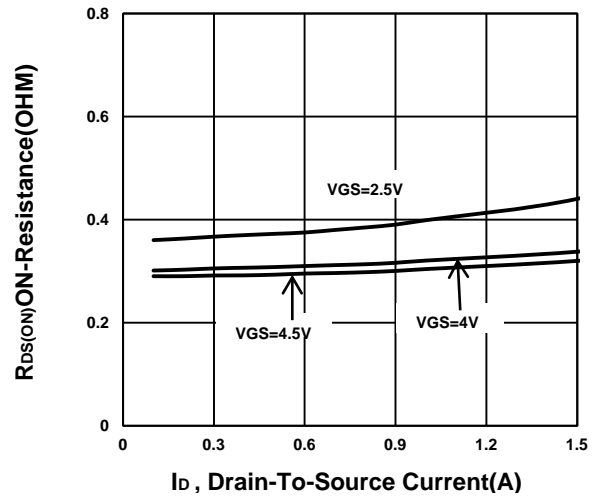
Transfer Characteristics



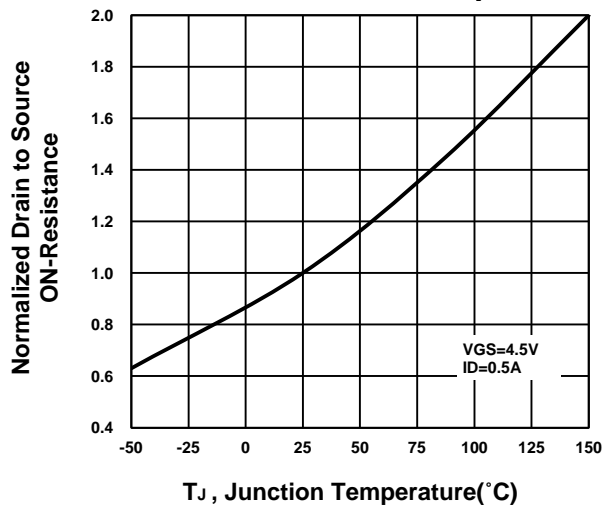
On-Resistance VS Gate-To-Source Voltage



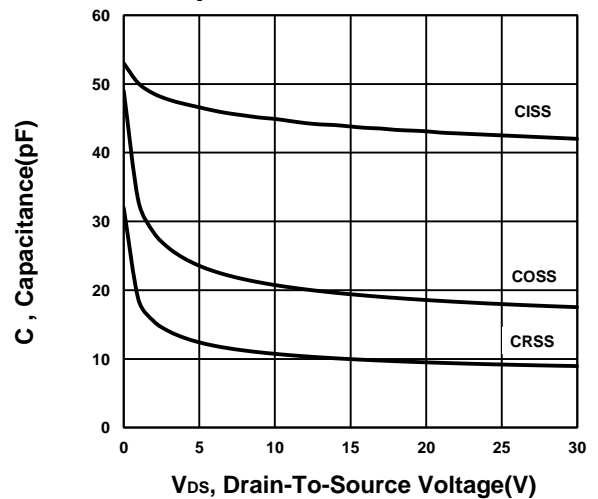
On-Resistance VS Drain Current



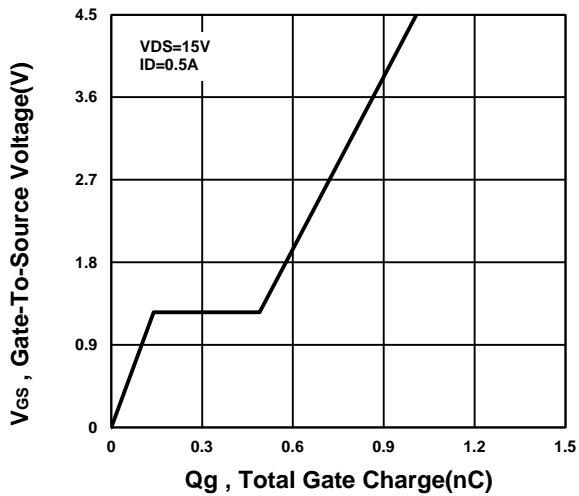
On-Resistance VS Temperature



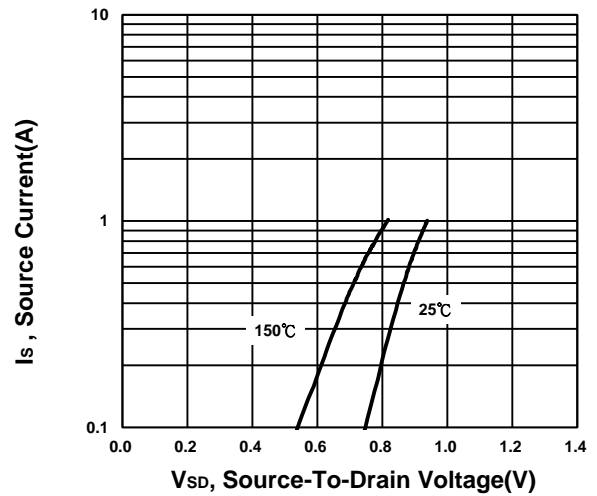
Capacitance Characteristic



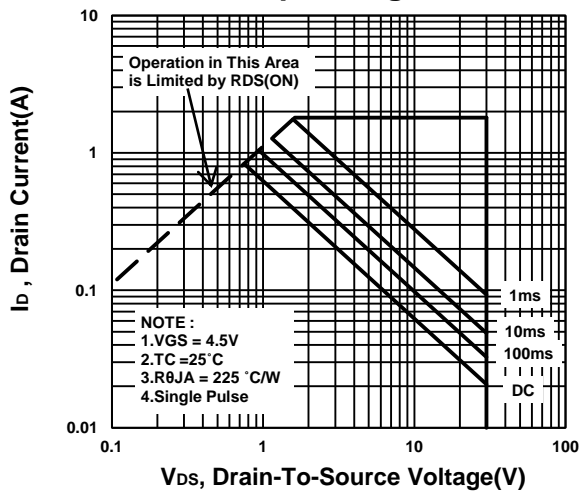
Gate charge Characteristics



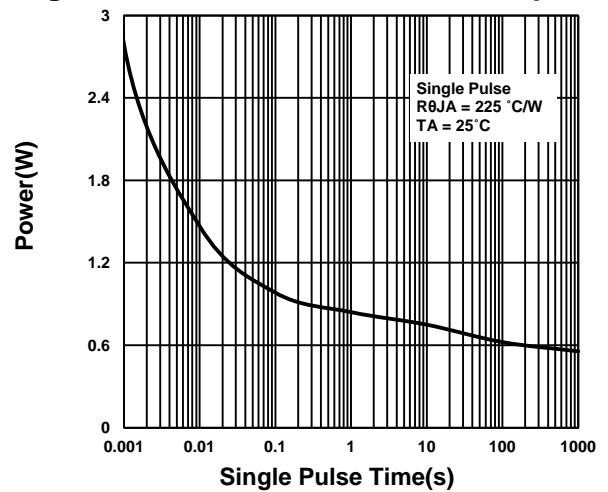
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

